10. Cancer and hydatids cause the diminution of the urea when a considerable portion of the liver has been destroyed.

11. Active congestion of the liver causes increase of urea.

12. Lead-colic, with retraction of the liver during the attack, is accompanied by a small excretion of urea; as the liver regains its size, the urea augments.

13. Passing glycosuria is often accompanied by an increase in the urea excreted, or this may occur at the moment of its disappearance.

14. In diabetes the excretion of urea reaches a figure unattained in any other disease.

From these conclusions he infers that the quantity of urea depends upon—

1. The integrity of the hepatic cells;
2. The greater or less activity of the hepatic circulation.—*London Med. Record*, Jan. 15, 1875.

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17. *On some New Tests for Bile Pigment.*—Dr. Walter G. Smith, Assistant Physician to the Adelaide Hospital, states (*Dublin Journ. of Med. Science*, Dec. 1876) that he has tried Maréchal's test (*Journ. de Pharm. et de Chemie*, Mars, 1869) in almost every case of jaundice that came under his notice in the wards or dispensary of the Adelaide Hospital, and has repeated and varied the test many times in the one case. A few specimens of bilious urine, kindly furnished to him by other hospital physicians, have also been tested, *and in no single case has he failed to get the distinctive colour reaction.*

The best mode of procedure is to place about ʒj of the urine in a test-tube, and then to allow one or two drops of tinct. iodinii (B. P.) to trickle down the side of the tube, held nearly horizontally, so that the two fluids may touch but not mix. If bile pigment be present, a fine green colour will almost immediately be developed below the red layer of iodine tincture. By holding the test-tube up against a white cloud, or against any white surface, in a good light, the three zones of colour will clearly appear—viz., the red iodine layer, and the yellow stratum of urine, separated by the green layer.

The test succeeds better by flotation in a test-tube than by allowing the tincture of iodine to run into contact with the urine on a white plate.

If the colour of the urine be very dark, it is better to dilute it with at least an equal volume of water before applying the test. Should the quantity of bile pigment be very small, it is advisable to make use of a specimen of healthy, non-bilious urine as a standard of comparison, treating it similarly with the iodine solution. Very small quantities of the pigment can be detected by shaking up a little of the urine with one-fourth its bulk of chloroform. Allow it to stand, decant the supernatant urine, filter the yellow chloroform stratum, evaporate to dryness, and test. With the iodine test Dr. S. has succeeded in showing the presence of bile pigment in the yellow sputum of one case of jaundice. A simple solution of iodine in spirit will not answer, on account of the precipitation of free iodine on dilution, and the liquor iodinii and linimentum iodinii are unnecessarily strong. Even the tinct. iodinii (B.P). may be sometimes advantageously diluted with spirit. It is important not to *mix* the iodine solution with the urine, and not to add too much of the iodine. From neglect of these precautions Dr. S. has known the test fail in the hands of others.

The green colour usually lasts for a considerable time, and may persist for days. Gradually it turns to a dusky brown, but even then the green can sometimes be restored by the cautious addition of iodine. Heat changes the green speedily to brown, and previous boiling of the urine prevents the development of the colour. Nothing characteristic was observed when the green fluid was examined by the spectroscope. The *cause* of the coloration evidently lies in a limited oxidation, the bilirubin, as in Gmelin's test, being probably converted into biliverdin, with this difference, that other tints—red, blue, or yellow—are not evoked by the feebler oxidizing power of the iodine.

The results of a number of experiments point to the conclusion that the green test is not a mere chromatic change, but is a true oxidation effect.

Up to the present Dr. S. has not been able to meet with a single source of fallacy in the use of the iodine test. Thus, in the deeply-coloured urines of continued fever, of acute pneumonia, of cirrhosis of the liver, of Addison's disease (for which latter opportunity he is indebted to Dr. Duffey), and in yellow vomit, he has uniformly obtained negative results. Bloody urine offers no difficulty, and the presence of albumen does not interfere with the test.

Briefly to sum up the results of Dr. Smith's observations, it would appear that the value and delicacy of the nitric acid test are less than is commonly supposed, although it is depended upon in delicate physiological investigations, and that it is desirable to have at command supplementary tests for biliary pigment which shall be easy of execution and free from fallacy.

Four test-liquids seem to answer to these indications—viz., tincture of iodine, ferric chloride, peroxide of hydrogen, and the acetic or phosphoric solution of peroxide of lead. The two latter liquids possess over the former the advantage of being themselves colourless, whereby any change of colour produced in testing is more readily appreciated; and the phospho-plumbic solution especially promises well as a delicate reagent.

Peroxide of lead has been utilized in experiments on bile (Maly), but peroxide of hydrogen, and ferric chloride have not, to my knowledge, been used by other experimenters, and I venture to hope that physiologists and clinical observers will test their limits of usefulness.[1]

With a fresh supply of material Dr. S. purposes to study more closely the action of the iron, lead, and hydrogen peroxide tests; but, as the clinical experiments have been chiefly conducted with the iodine test, he mentions, in conclusion, the reason which seems to recommend tincture of iodine to the notice of those interested in such matters.

1. A single reagent, always easy to obtain, is alone necessary.
2. The test-liquid is not corrosive.
3. A single definite colour is produced with the bile pigment.
4. The colour is sufficiently persistent.
5. From the less powerful chemical energy of the reagent, as compared with that of nitric acid, there is a diminished liability to error.
6. No other pigment than bile will yield the characteristic green colour. And lastly,
7. The test fully equals in delicacy, possibly surpasses, the nitric acid test.[2]

18. *Cystic Hæmatoma of the Spleen.*—Dr. PAUL SPILLMAN describes (*Archives de Physiologie*, Aug.) a case in which he found this form of tumour in the spleen; he can find no record of a similar tumour occurring in this organ. It was of the size of an infant's head, attached to the inside of the spleen near the hilus. The interior of the cyst was made up of a number of communicating anfractuosities filled with a yellowish fluid containing cholesterine. The following facts, taken from the detailed account, are dwelt upon as satisfactory evidence of the true character of the growth. 1. The cavity was lined with a single layer of cells like those which form the epithelial lining of the vessels. 2. In the general wall many points of calcareous deposit existed. 3. The inner surface was divided into numerous and intricate spaces. 4. The fluid contained numerous blood-corpuscles and crystals. 5. Neither inosite nor succinic acid, both of which constantly occur in hydatids, was found in the fluid. The cholesterine is probably the residue of absorbed blood.—*London Med. Record*, Jan. 15, 1877.

19. *The Effect of Pilocarpine (the Alkaloid of Jaborandi) on two Cases of Unilateral Sweating.*—Dr. SYDNEY RINGER, Professor of Therapeutics at University College; and Mr. J. S. BURY, Physician's Assistant at University College Hospital, publish in the *Practitioner* (Dec. 1876) the report of an interesting clinical investigation into the effects of the alkaloid of jaborandi on two cases of unilateral sweating, of which the following is an abstract:—

A man and a woman, the subjects of unilateral sweating, were admitted into

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[1] An account of recent investigations on the bile pigments will be found in Watts' Dictionary of Chemistry. Second Supplement, 1875.

[2] It should be borne in mind that all the experiments refer to *human* bile pigment.